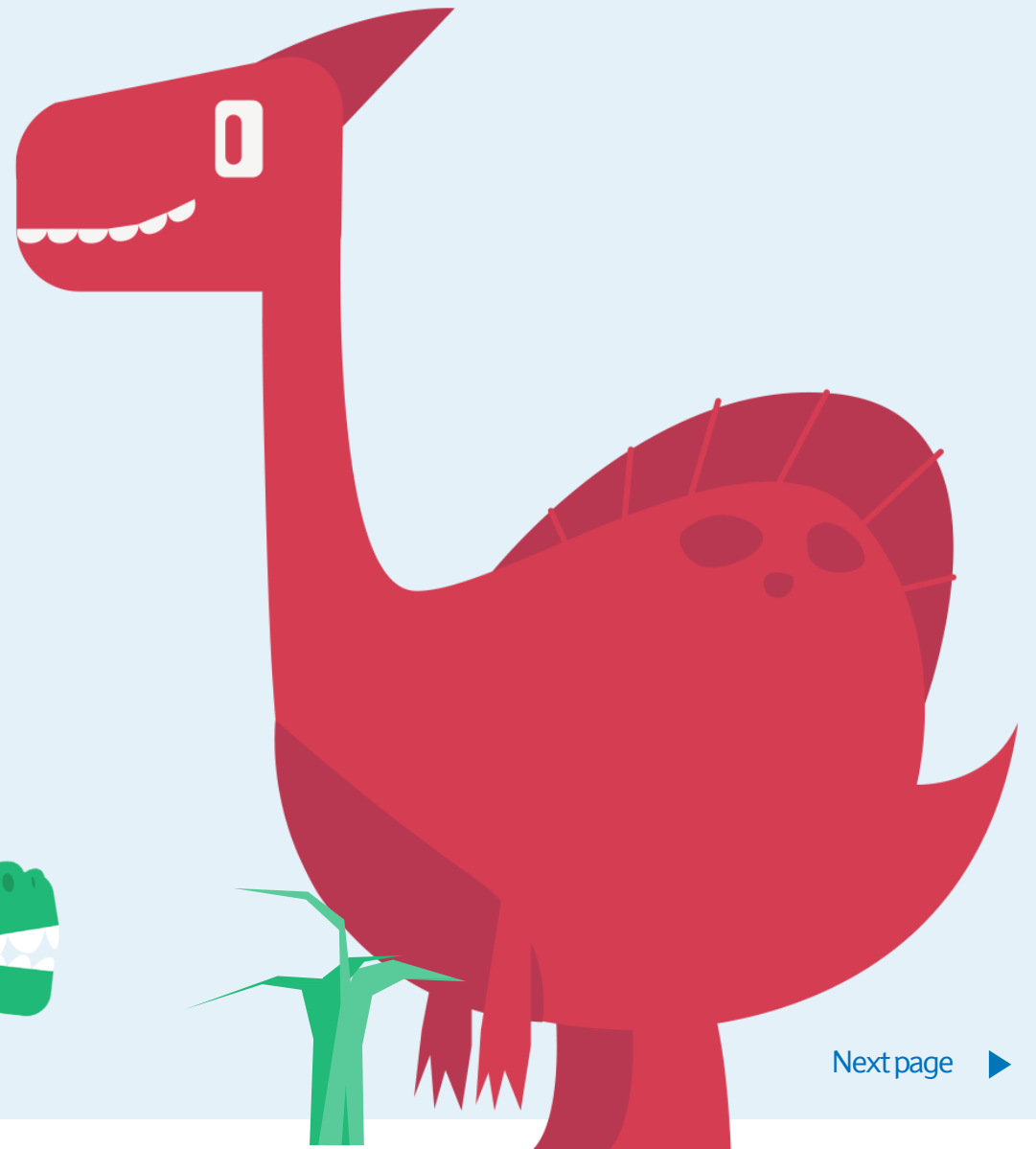


Student workbook

Functional functions

Code Playground



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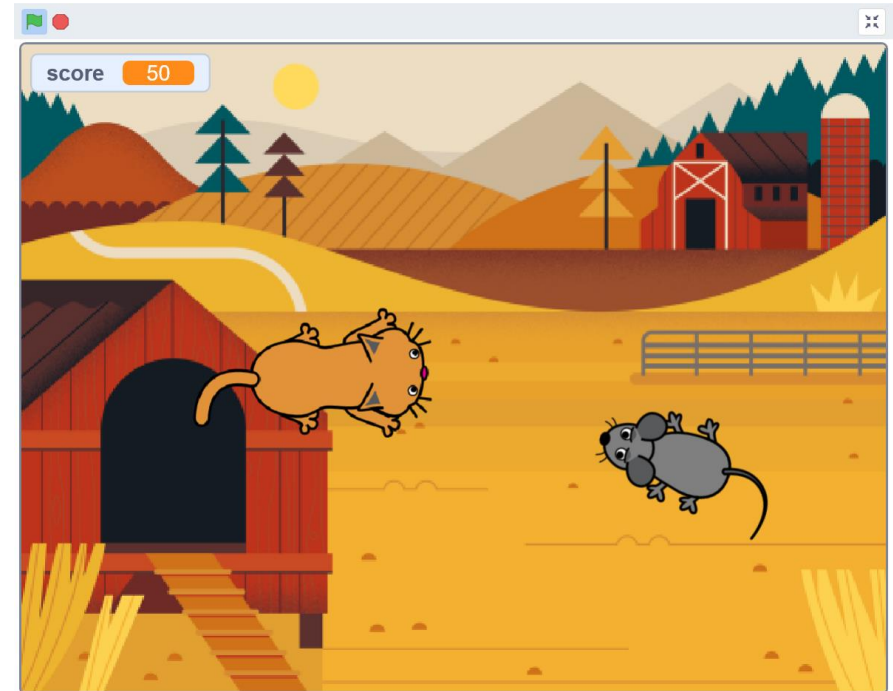
Functional functions

Code Playground Live

The farm cat is trying to catch the mouse, can you help?

This project is designed for Scratch 3.0 and will show you how to create your own coding blocks to use in your projects.

Hope you enjoy the game!

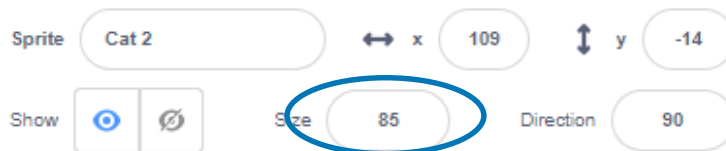
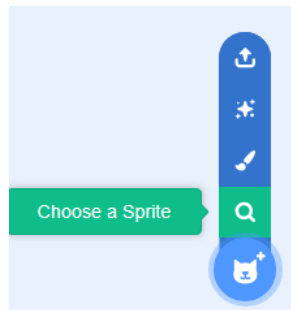
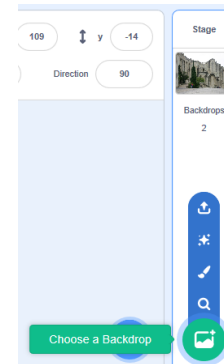


Functional functions

Code Playground Live

Step 1

Choose a backdrop from the scratch library as your stage. Here we've used a farm backdrop. Click 'Choose a backdrop', 'outdoors', then 'Farm'



Step 2

Let's choose your character. Click 'Choose a Sprite' and go to the sprite library. Then select 'Cat 2' as your first character

**Top tip: use the 'size' sprite tool to help make your sprites fit on the screen

Functional functions

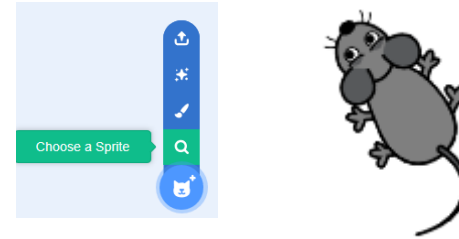
Code Playground Live

Step 3

Next click 'Choose a Sprite' again and this time select 'Mouse 1'.

Now you're ready to start coding!

**Top tip: rename your sprites as you create / import them to keep track of your coding



Functional functions

Code Playground Live

Step 4

First we will make our new friend move by adding this code to our cat sprite.

When you've added this code, have a go at making your sprite move around the screen.



Functional functions

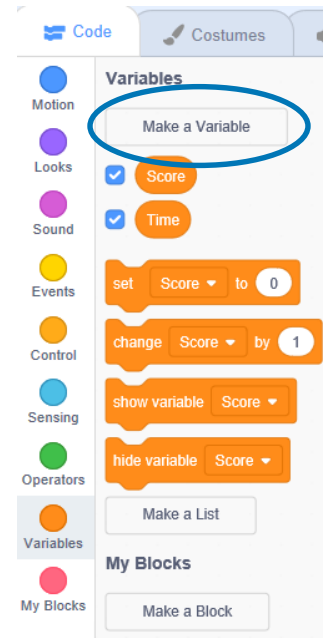
Code Playground Live

Step 5

Now we need to set up our timer and our scoring system.

Variables: In coding a variable is a bit like memory for your project. It can remember information that can change throughout the program or game. Things like score and time are variables.

We need to make a variable for our game. Use the orange Variables tab and select 'Make a Variable' and call it 'Score'.



**Top Tip - Not sure where to find the coding blocks you need? Use the colour coding on the tabs as a handy hint!

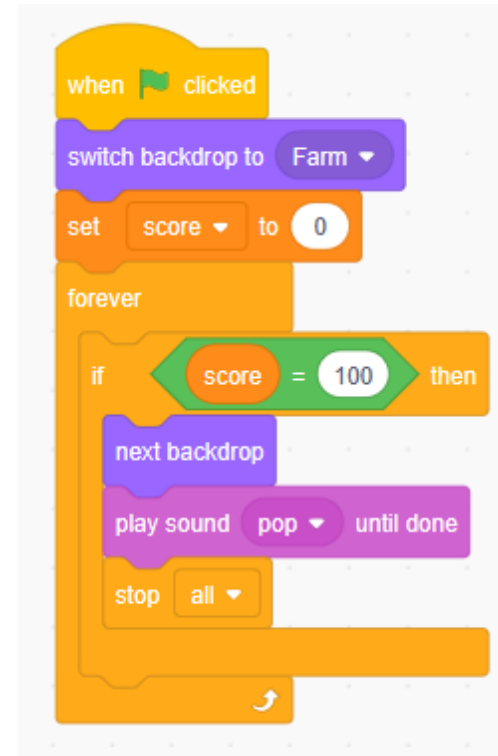
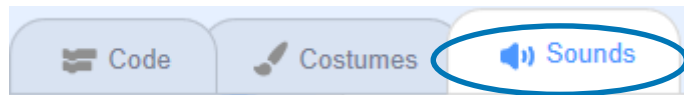
Functional functions

Code Playground Live

Step 6

Now add this code to the stage, make sure you have the blue outline around the stage to confirm you're coding in the right place.

**Top Tip – You can access the sound library by selecting the 'Sounds' tab above the block section and then select the sounds icon at the bottom of the screen. Here you can change the sound you use for the end of the game



Functional functions

Code Playground Live

Step 7

Now to make our mouse move and set up what happens when the cat catches the mouse. Use this script for your mouse.



```
when green flag clicked
  show
  forever loop
    move 20 steps
    turn pick random 1 to 10 degrees
    wait 0.5 seconds
    if on edge, bounce
    turn pick random 1 to 10 degrees
    if touching Cat 2 ? then
      hide
      change score by 10
      go to random position
      wait 1 seconds
      show
```

The image shows a Scratch script for a mouse character. It starts with a 'when green flag clicked' event block, followed by a 'show' block. A 'forever' loop contains the following actions: 'move 20 steps', 'turn pick random 1 to 10 degrees', 'wait 0.5 seconds', 'if on edge, bounce', 'turn pick random 1 to 10 degrees', 'if touching Cat 2 ? then' (which triggers a 'hide', 'change score by 10', 'go to random position', 'wait 1 seconds', and 'show' block), and finally a 'show' block at the end of the loop.

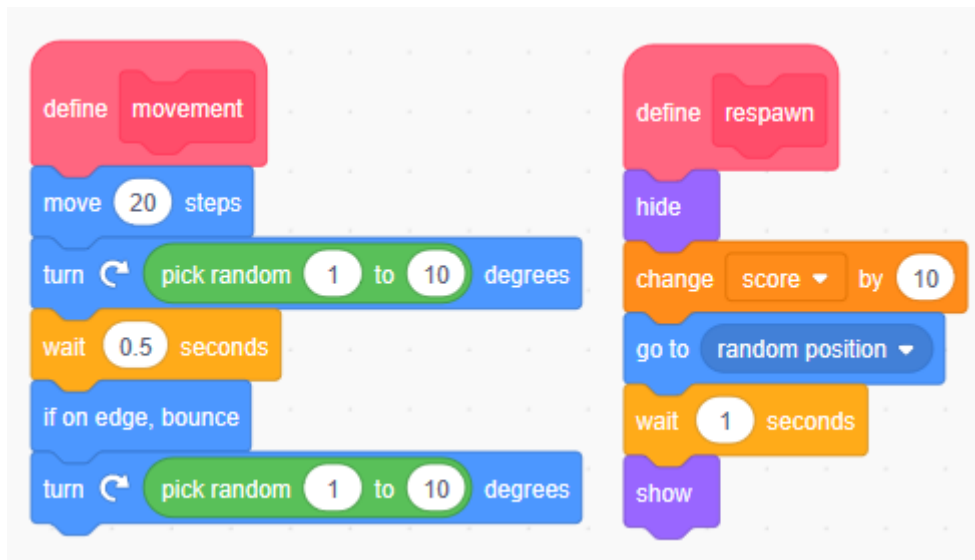
Functional functions

Code Playground Live

Step 7

Next to make our code neater and more efficient, we can refactor or change the code using blocks we create.

First select 'My Blocks' in the blocks section and then 'Make a Block'. Name your block 'movement'
Next create a second block and call this 'respawn'



Step 7

Next you will see that two blocks have appeared in the coding section which say 'define'. This allows you to code what these blocks will do. Move the movement code under the define movement block, and add the respawn code to the define respawn block.

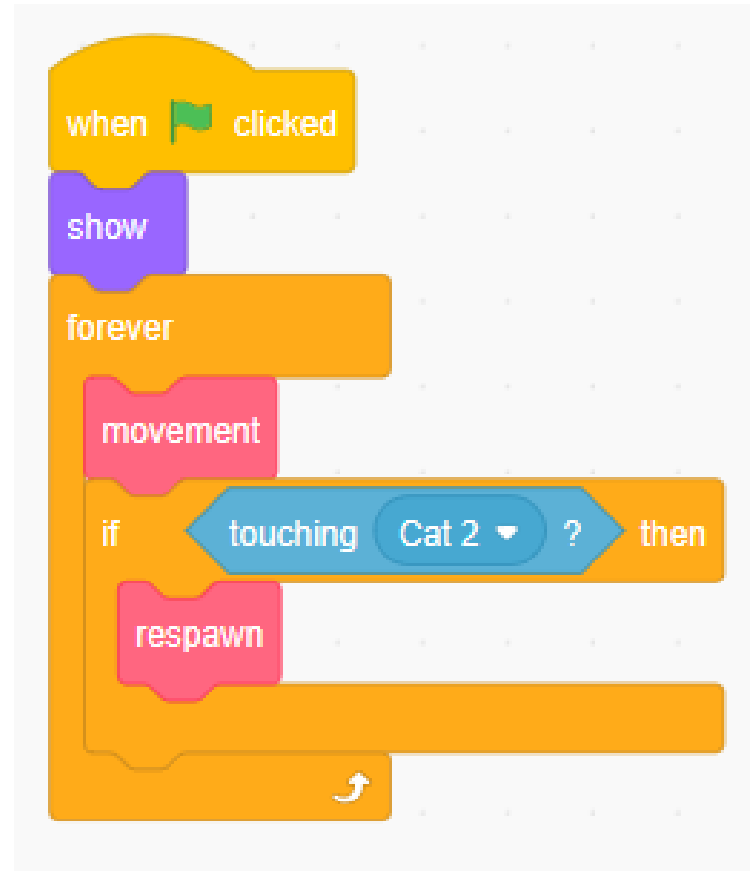
Functional functions

Code Playground Live

Step 8

Now to build our custom blocks into the project, add them to your script like this and then you're ready to play the game.

How many mice can you catch...



Functional functions

Code Playground Live

Level up!

- Can you add a game over screen using your blank backdrop?
- Can you create a countdown timer so the game lasts 30 seconds?
- Can you add another character that chases the cat?
- Can you create an introduction to the game complete with instructions?
- Can you add in a second level?

Notes

Code Playground